

## EIGHT NEW SPECIES OF AUSTRALIAN BUPRESTIDAE (INSECTA: COLEOPTERA)

by S. BARKER\*

### Summary

BARKER, S. (1995) Eight new species of Australian Buprestidae (Insecta, Coleoptera). *Trans. R. Soc. S. Aust.* 119(4), 149-156, 30 November, 1995.

Six new species of *Castiarina* namely *C. corallina* sp. nov., *C. ernestadamsi* sp. nov., *C. euknema* sp. nov., *C. octopunctata* sp. nov., *C. oedemerida* sp. nov. and *C. prolata* sp. nov., one new species of *Themognatha*, *T. viridescens* sp. nov., and one species of *Astraeus*, *A. powelli* sp. nov. are described.

KEY WORDS: Coleoptera, Buprestidae, New species, *Castiarina*, *Themognatha*, *Astraeus*

### Introduction

Despite the increase in specialist collecting of Australian Buprestidae undertaken by amateur entomologists over the last twenty years, new species are still being found. This reflects the vastness of the continent as well as the cyclic nature of the life histories of many of the arid area species. Of the species described herein, specimens of *Astraeus powelli* have been available since 1970 but the specimens in the South Australian Museum collection were inadvertently sorted into a tray full of *A. aberrans* v. de Poll, the closest species, and it was only through the alertness of Mr M. Powell that this species has been recognised. *Themognatha viridescens* was collected many years ago in inaccessible country at Iron Range, Cape York Peninsula. A series has now become available from the Jack Macqueen collection, lodged with the Australian National Insect Collection (ANIC). Three species have only recently been collected, *Castiarina oedemerida* and *C. prolata* in Queensland and *C. corallina* in Western Australia. *Castiarina euknema* was known for some years from two female specimens and a male has only been located recently in the collection of ANIC. *Castiarina octopunctata* specimens have been collected frequently but until now have not been distinguished from *C. parallela*. Until recently *C. ernestadamsi* has been confused with *C. straminea* MacLeay.

### Materials and Methods

Male genitalia were prepared and displayed by the method described by Barker (1987). The holotype is illustrated in all species. Measurements given are mean total body length and width with standard error, except where there are insufficient specimens available to make the last calculation. Codens used in the text for museum and private collections following the four letter

system of Watt (1979) and Arnett *et al.* (1993) are: AIMS: Australian Institute of Marine Science, Townsville; ANIC: Australian National Insect Collection, CSIRO, Canberra; SAMA: South Australian Museum, Adelaide; WAMA: Western Australian Museum, Perth; JHIQ: Mr J. Hasenpusch, Innisfail; MHSA: Mr T. M. S. Hanlon, Sydney; MPWA: Mr M. Powell, Melville; GWQA: Mr G. Wood, Atherton.

### *Castiarina corallina* sp. nov. (FIGS 1D, 2C)

*Holotype*: ♂, 144 km NW Wittenoom, W.A., 25.iii.1994, M. Golding, M. Powell, WAMA.

*Allotype*: ♀, 140 km NW Wittenoom, W.A., 25.iii.1994, M. Golding, M. Powell, WAMA.

*Paratypes*: 2 ♀♀, Millstream Stn, W.A., 25.iii.1994, M. Golding, M. Powell, MPWA; 1 ♂, same data as allotype, MPWA; 4 ♂♂, 145 km NW Wittenoom, MPWA, SAMA.

### Colour

Head, antennae dark blue. Pronotum red-brown, in some specimens with medial smudge of dark blue along basal margin. Scutellum dark blue. Elytra red-brown with the following markings: dark blue along basal margin, in some specimens with mark extended to surround scutellum; large post-medial spot on each elytron; apical mark. Ventral surface: pre-sternum red-brown; meso- and meta-sternum dark blue; abdomen red-brown except laterally at base variably dark blue; legs dark blue.

### Shape and sculpture

Head closely punctured, broad median sulcus, short muzzle. Antennae, antennomeres 1-3 obconic, 4-11 toothed. Pronotum closely punctured, narrow basal fovea; apical margin projecting medially, basal margin bisinuate; laterally parallel-sided at base, angled outwards, rounded to widest pre-medially, tapered to apex. Scutellum cordiform, glabrous, flat. Elytra punctate-striate, intervals convex, punctured; laterally

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parallel-sided at base, rounded at humeral callus, concave rounded post-medially, narrowed to spineless apex; apices hardly diverging, apical margin subseriate. Ventral surface, shallowly punctured, edges of abdominal segments glabrous, without hairs,  $S_7$  apically rounded in both sexes.

#### Size

Males:  $14.3 \pm 0.48 \times 5.3 \pm 0.14$  mm (6). Females:  $16.8 \times 6.5$  mm (3).

#### Aedeagus (Fig. 1D)

Parameres angled outwards from basal piece, rounded apically. Penis pointed, sides acutely angled away. Apophysis of basal piece medium width, tapered, rounded apically.

#### Remarks

The dorsal markings of this species resemble those of *Castiarina quadriplagiata* (Carter) which has only been collected in Queensland. However, *C. corallina* in a narrower species, it is a paler red than *C. quadriplagiata* and the male genitalia differ (Fig. 1C).

#### Etymology

Derived from *L. corallinus*, coral coloured.

#### *Castiarina oedemerida* sp. nov. (FIGS 1H, 2F)

**Holotype:** ♂, Georgetown, Qld, 28.ii.1993, J. Hasenpusch, SAMA I 21285.

**Paratype:** Qld: 1♂, Georgetown, 1.iii.1993, J. Hasenpusch, JHIA.

#### Colour

Head black. Antennae dark blue. Pronotum brown with the following black markings: medial spot, smaller spot on each side, narrow basal border, expanded anteriorly on each side. Scutellum black. Elytra yellow-brown with the following black markings: M-shaped mark along anterior margin, arms covering humeral callus; post-medial fascia reaching margin, expanded anteriorly and posteriorly along suture; apical mark. Ventral surface: prosternum yellow-brown; meso-sternum and meta-sternum and coxae dark blue; abdomen yellow-brown.  $S_5$  with lateral black spot,  $S_6$  with lateral black bar,  $S_7$  black apical edge; edges of  $S_5$ ,  $S_6$ ,  $S_7$ , testaceous; legs dark blue. Hairs silver.

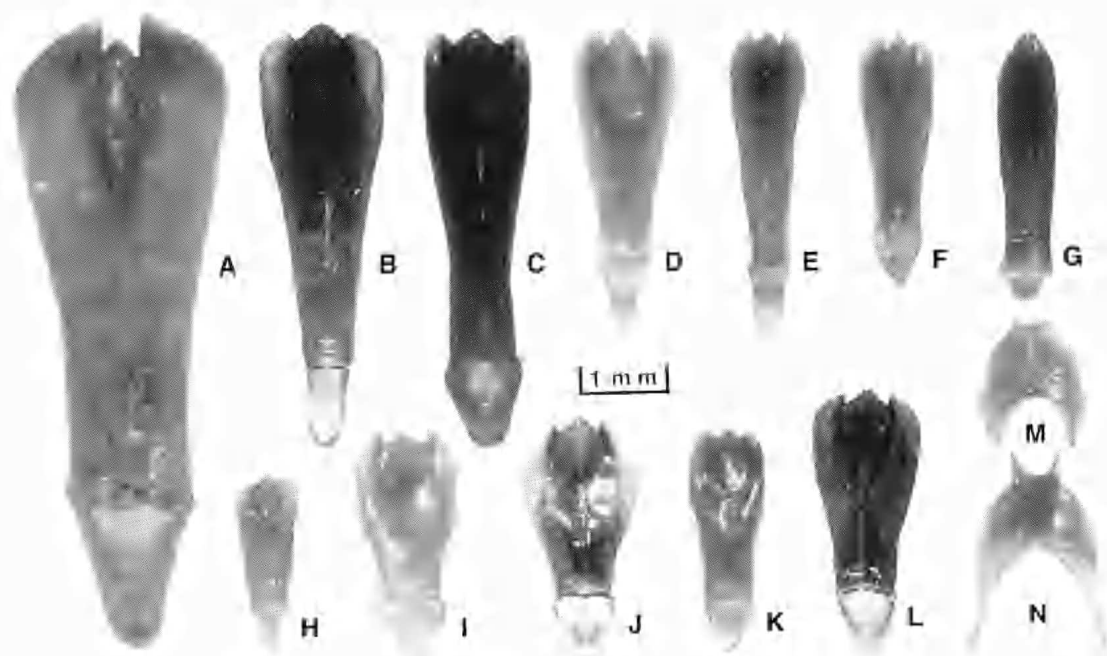


Fig. 1. Photomicrographs of male aedeagi of the following *Castiarina*, *Astraeus* and *Themognatha* species. A. *Themognatha viridescens*. B. *Castiarina acuminata* Kerremans. C. *Castiarina quadriplagiata* Carter. D. *Castiarina corallina* sp. nov. E. *Castiarina prolata* sp. nov. F. *Castiarina octopunctata* sp. nov. G. *Astraeus powelli* sp. nov. H. *Castiarina oedemerida* sp. nov. I. *Castiarina ernestadamsi* sp. nov. J. *Castiarina straminea* Saunders. K. *Castiarina euknema* sp. nov. L. *Castiarina rufipes* MacLeay. Photomicrographs of proctigers of types of *Castiarina octopunctata* sp. nov. M. Holotype male, N. Allotype female.

*Shape and sculpture*

Punctured over entire dorsal surface. Head closely punctured, median sulcus, short muzzle. Antennae, antennomeres 1-3 obconic, 4  $\frac{1}{2}$  toothed, 5-11 toothed. Pronotum closely punctured, glabrous area surrounding basal fovea, fovea at each angle; apical margin straight, basal margin barely bisinuate; laterally rounded from base to apex, widest pre-

medially. Scutellum scutiform, punctured, excavate. Elytra punctate-striate, intervals convex, heavily punctured; laterally angled out from base, rounded at humeral callus, concave, rounded post-medially at widest part to bispinose apex; small marginal spine, small sutural spine, margin rounded and indented between spines, apices slightly diverging. Ventral surface closely punctured, edges of abdominal segments glabrous, few short hairs.  $S_7$ ; males truncate, indented medially; females unknown. Legs: in male tarsomeres 1-3 without pulvilli, replaced by median longitudinal ridge.

*Size*

Males, 10.0 x 3.5 mm (2).

*Aedeagus* (Fig. 1H)

Parameres angled outwards from basal piece, rounded at apex. Penis blunt, sides acutely angled away. Apophysis of basal piece medium width, tapered, rounded apically.

*Remarks*

This species appears to be an oedemerid mimic as its colour and pattern are similar to known oedemerid species; the model is unknown. It is not close to any other known species.

*Erymology*

The name is derived from that of the beetle family Oedemeridae.

*Castiarina euknema* sp. nov.  
(FIGS 1K, 2E)

*Holotype*: ♂, Surveyor's Pool, W.A., 15.viii.1983, I. D. Naumann, J. C. Cardale, ANIC.

*Allotype*: ♀, 2 km N Jabiluka, N.T., 21.iii.1981, M. Capps, SAMA I 21286.

*Paratype*: W.A.: ♀, 34 km S Roebuck, W.A., 8.vii.1984, M. Powell, M. Golding, MPWA.

*Colour*

Head black with yellow reflections, elongate yellow frontal spot. Antennae blue-green. Pronotum: anterior and basal margins black with yellow reflections; yellow laterally; medial black mark with yellow reflections in the shape of sleeveless T-shirt, the neck enclosing a very small yellow spot. Scutellum black with yellow reflections. Elytra yellow with the following black markings: narrow basal margin; pre-medial fascia with ends expanded anteriorly over humeral callus reaching anterior margin and enclosing yellow basal spot, posteriorly reaching margin and enclosing yellow spot on margin; post-medial fascia reaching margin and meeting posterior extension of pre-medial fascia and with it enclosing yellow medial spot; mark covering whole apex, elongate yellow mark reaching margin, but not suture, lying between this and post-medial

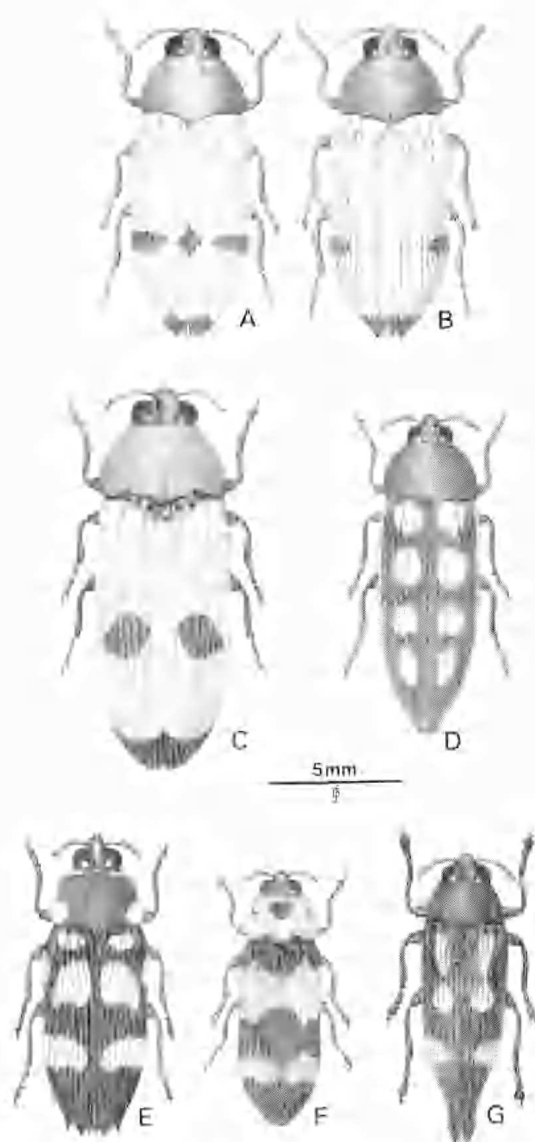


Fig. 2. Habitus illustrations of the following *Castiarina* species. A, *C. emestadamsi* sp. nov. holotype. B, *C. strigata* MacLeay. C, *C. corallina* sp. nov. holotype. D, *C. octopunctata* sp. nov. holotype. E, *C. euknema* sp. nov. holotype. F, *C. oedemerida* sp. nov. holotype. G, *C. prolata* sp. nov. holotype.

fascia. In allotype black marks less prominent and apical mark encloses a small yellow apical spot. Ventral surface yellow, edges of sutures black with green reflections.  $S_3$ ,  $S_5$ ,  $S_6$  with lateral spots coalesced with marks along edges. Legs: femora and tibia blue; tarsomeres dark blue. Hairs silver.

#### *Shape and sculpture*

Head shallowly punctured, shallow median sulcus, medium length muzzle. Antennae compressed, antennomeres 1-4 obconic, 5-11 toothed. Pronotum shallowly punctured, basal fovea extending forwards to middle as glabrous line, basal notches on each side closer to margin than middle; apical margin straight, basal margin barely bisinuate; laterally rounded from base, widest pre-medially, rounded and narrowed to apex. Scutellum scutiform, without punctures, excavate along anterior margin. Elytra punctate-striate, intervals flat anteriorly, convex apically; laterally angled out from base, rounded at humeral callus, concave, rounded post-medially and narrowed to trispinose apex; marginal and sutural spines equal, medial spine slightly larger, margin rounded and indented between spines, apices slightly diverging. Ventral surface with shallow punctures, edges of abdominal segments glabrous, few short hairs.  $S_7$  truncate both sexes.

#### *Size*

Male, 10.9 x 4.2 mm (1). Female, 11.9 x 4.5 mm (2).

#### *Aedeagus* (Fig. 1K)

Parameres parallel-sided from basal piece, rounded medially then parallel-sided, rounded at apex. Penis pointed, sides angled away. Apophysis of basal piece medium width, tapered, rounded apically.

#### *Remarks*

This species has similar markings to those of *C. rufipes* MacLeay, except that the legs are blue whereas they are red in the other species. The male genitalia are quite different (Fig. 1L).

#### *Etyymology*

Derived from Gr. *euknemos*, beautiful legs.

#### *Castiarina prolata* sp. nov. (FIGS 1E, 2G)

*Holotype*: ♂, Cardwell Ra., Qld, 23.xii.1993, J. Hasenpusch, SAMA I 21287.

*Allotype*: ♀, same data as holotype, SAMA I 21288.

*Paratypes*: 1 ♂, 1 ♀ same data as holotype, JHQA.

#### *Colour*

Head and antennae black with green and gold reflections. Pronotum black with green reflections at base. Scutellum black with blue reflections. Elytra yellow with black markings coalesced forming an elongate yellow basal mark, a round yellow pre-medial mark and a predominantly red sub-apical mark,

touching margin not reaching suture and merging into yellow closest to it. Ventral surface green with yellow reflections. Legs: femora, dorsal surface deep blue, ventral surface green with gold reflections; tibia and tarsi dark blue. Hairs silver.

#### *Shape and sculpture*

Head shallowly punctured, broad median sulcus, short muzzle. Antennae, antennomeres 1-3 obconic, 4-11 toothed. Pronotum shallowly punctured, glabrous, small basal fovea, larger fovea at each basal angle; apical margin projecting slightly medially, basal margin bisinuate; rounded from base, narrowed to apex. Scutellum tulipiform, few punctures, glabrous, flat. Elytra anteriorly punctate-striate, intervals raised posteriorly, intervals convex; laterally parallel-sided at base, rounded at humeral callus, rounded and tapered posteriorly, then attenuated, rounded at apex to pointed marginal spine, deeply indented and rounded to minute sharp sutural spine, apices diverging. Ventral surface with shallow punctures, edges of abdominal segments glabrous, sparse medium length hairs. Mesosternal process inflated. Elytra cantilevered over last visible abdominal sternite. Legs: femora and tibia long and thin; tarsomeres with enlarged pulvilli.  $S_7$  truncate both sexes.

#### *Size*

Males, 10.9 x 3.4 mm (2). Females, 12.4 x 3.6 mm (2).

#### *Aedeagus* (Fig. 1E)

Parameres elongate, angled outwards from basal piece, apically rounded. Penis pointed, sides obtusely angled away. Apophysis of basal piece medium width, elongate, tapered, rounded apically.

#### *Remarks*

This species is a '*C. producta*' group mimic. It resembles *C. acuminata* Saunders which also has greatly attenuated apical spines but is heavily costate. The apical spines of *C. prolata* are both obvious whereas in *C. acuminata* the marginal spine is absent. Male genitalia differ (Fig. 1B).

#### *Etyymology*

Derived from *L. prolatus*, elongate.

#### *Castiarina ernestadamsi* sp. nov. (FIGS 1I, 2A)

*Holotype*: ♂, Mourangee, Edungalba, Qld, 26.xii.1979, E. E. Adams, SAMA I 21289.

*Paratypes*: Qld: 3 ♂♂, Mourangee, Edungalba, S. A. Adams & E. E. Adams, SAMA.

#### *Colour*

Head maroon at base blending into blue-green, blue muzzle. Antennae, antennomeres 1-2 blue-green, 3-11

bronze green. Pronotum maroon. Scutellum blue or blue-green. Elytra pale yellow with following dark blue markings: narrow basal margin; small mark over each humeral callus; remnant post-medial fascia touching lateral margin reaching half way to suture, small remnant mark on suture; small apical mark. Ventral surface: sternum maroon; abdomen testaceous; legs blue. Hairs silver.

#### Shape and sculpture

Head shallowly punctured, medium sulcus, short muzzle. Antennae, antennomeres 1-3 obconic, 4-11 toothed. Pronotum shallowly punctured, basal fovea extending forwards to middle as glabrous line, basal notches represented by glabrous area on each side closer to margin than middle; apical margin projecting medially, basal margin barely bisinuate; laterally parallel-sided at base, angled outwards and rounded to widest pre-medially, rounded and narrowed to apex. Scutellum scutiform, glabrous, flat. Elytra punctate-striate, intervals convex, lightly punctured; laterally angled outwards from base, rounded at humeral callus, concave, rounded post-medially and narrowed to bispinose apex; both spines small and sharp, margin rounded and indented between spines, apices hardly diverging, apical margin subseriate. Ventral surface with shallow punctures, edges of abdominal segments glabrous, sternum with few medium length hairs, abdomen almost hairless.  $S_7$ : males truncate; female unknown.

#### Size

Males,  $12.4 \pm 0.09 \times 4.8 \pm 0.04$  mm (4).

#### Aedeagus (Fig. 1f)

Lightly tanned. Parameres parallel-sided from basal piece, pre-medially rounded, parallel-sided then rounded to apex. Penis pointed, sides obtusely angled away. Apophysis of basal piece narrow, rounded apically.

#### Remarks

This species was previously confused with *C. straminea* MacLeay. However it is smaller, it has a smooth pronotum with small punctures whereas *C. straminea* has heavy punctation. It has darker elytral markings than *C. straminea* and the male genitalia differ (Fig. 1f). A form of *C. strigata* MacLeay (Fig. 2b) occurs in the type locality, similar in size and pattern but not in colour. It has very light elytral markings, the post-medial fascia being considerably reduced. The head and pronotum are green with reddish reflections in some specimens.

#### Etymology

In honour of Mr E. E. Adams, octogenarian. Edungalba, Queensland who has assisted my research for many years.

#### *Castiarina octopunctata* sp. nov. (FIGS 1f, 2d)

*Holotype*: ♂, 91 km NNE Zanthus, W.A., 21.x.1986, M. Powell, WAMA.

*Allotype*: ♀, Wialki, W.A., 21.ix.1970, S. Barker, SAMA 1 21290.

*Paratypes*: W.A.: 1 ♂, SAMA: 1 ♀, summit Mt Cooke, 10.xi.1956, S. Barker, SAMA: 1 ♀, Wialki, 18.ix.1957, S. Barker, SAMA: 2 ♂♂, Kalbarri N.P., 23.ix.1969, F. H. Uther-Baker, SAMA: 4 ♂♂, 2 ♀♀, Beverly T. O., Brookton Hwy, 19.ix.1970, S. Barker, SAMA: 2 ♂♂, same data as allotype, SAMA: 1 ♂, 6 km S Tammin, 8.xi.1970, S. Barker, SAMA: 3 ♂♂, 3 ♀♀, 1/2 way between Glen Eagles and Brookton Hwy, 13.x.1980, S. Barker, SAMA: 1 ♀, 8 km E Woolgangie, 22.x.1980, S. Barker, P. G. Kempster, SAMA: 1 ♂, 10 km E Merredin, 12.x.1990, S. Barker, SAMA: 1 ♂, 4 km W Zanthus, 21.x.1986, M. Powell, MPWA: 1 ♂, same data as holotype, MPWA: 1 ♀, Moora, WAMA: 1 ♀, McDermid Rock, 27.ix/3.x.1978, T. F. Houston, WAMA: 2 ♂♂, 1 ♀, Lake Ningham, WAMA: 1 ♀, Merredin, WAMA: 1 ♂, Karlgarin, W. Duboulay, WAMA: 1 ♀, Dedari, 7.x.1978, T. M. S. Hanlon, WAMA: 1 ♀, 21 km W York, 4.xi.1978, T. M. S. Hanlon, WAMA: 1 ♂, 1.5 km S Mt Jackson, 5/11.ix.1979, T. F. Houston *et al.*, WAMA: 1 ♂, 1 ♀, 12 km NNE Bungalbin Hill, 11/18.ix.1979, T. F. Houston *et al.*, WAMA: 1 ♂, 1 ♀, 14 km NNE Bungalbin Hill, 11/18.ix.1979, T. F. Houston *et al.*, WAMA: 3 ♂♂, 1 ♀, 15 km NNE Bungalbin Hill, 11/18.ix.1979, T. F. Houston *et al.*, WAMA: 2 ♀♀, Dedari, 21.ix.1979, T. M. S. Hanlon, WAMA: 1 ♂, Mt Dale, 29.ix.1980, T. M. S. Hanlon, MHSA: 1 ♂, Muckinbuddin, 10.x.1979, R. P. McMillan, WAMA: 1 ♂, Mt Walker, 34 km E Narembene, 23.x.1980, R. P. McMillan, WAMA: 3 ♂♂, 1 ♀, Mt Observation, 21.x.1987, R. P. McMillan, WAMA: 1 ♀, Beacon, 20.x.1981, R. P. McMillan, WAMA: 1 ♀, 20.ix.1990, Bonnie Rock, S. Barker, SAMA: 1 ♂, 10 km E Merredin, 12.x.1990, S. Barker, SAMA: 3 ♂♂, 2 ♀♀, Dedari, 22.x.1991, T. M. S. Hanlon, MHSA.

#### Colour

Head, antennae, pronotum dark coppery-purple. Scutellum dark blue with coppery-purple reflections. Elytra yellow with coalesced dark blue markings with coppery-blue reflections forming the following yellow marks: 4 large medial spots in a row on each elytron, the basal, pre-medial and post-medial roundish, the pre-apical elongate; narrow margin from base, not reaching apex. Ventral surface and legs brown with coppery-purple reflections. Hairs silver.

#### Shape and sculpture

Head closely punctured, broad median sulcus, short muzzle. Antennae, antennomeres 1-3 obconic; 4-11



toothed. Pronotum closely punctured, basal lobe extending forwards to middle as glabrous impressed line; apical margin projecting broadly medially, basal margin almost straight; laterally parallel-sided at base, slightly rounded, widest medially, slightly rounded to apex. Scutellum scutiform, glabrous, excavate. Elytra punctate-striate, intervals convex, smooth medially, punctured and rough laterally; laterally angled out from base, rounded at humeral callus, concave, rounded post-medially and narrowed to spineless apex, last interval indented and straight, apices slightly diverging. Entire ventral surface covered in dense, flat hairs, also present around lateral margins of pronotum and in some specimens encroaching onto dorsal surface.  $S_7$  males truncate; females rounded and slightly pointed.

#### Size

Males,  $11.9 \pm 0.16 \times 4.0 \pm 0.06$  mm (35), Females,  $12.7 \pm 0.18 \times 4.2 \pm 0.07$  mm (25)

#### Aedeagus (Fig. 1F)

Parameres angled outwards and gradually widened from basal piece, rounded at apex. Penis pointed, angled away obtusely. Apophysis of basal piece medium width, rounded apically. Proctiger with apex bluntly bilobed, the two projections variable (Fig. 1M).

#### Female terminalia (Fig. 1N)

Proctiger; apex with two narrow, pointed lobes.

#### Remarks

A species complex exists in Western Australia which includes *C. parallela* (White) with a more or less continuous gradation in size from the smallest (*C. parallela*) to larger species. *C. parallela* also occurs in eastern Australia. Until now I have not been able to separate the individual species in the western complex. *C. xanthopilosa* Hope and *C. vinata* Saunders are closely related species but only occur in eastern Australia. From examination of the terminal abdominal segments, it now appears as if males and females of both eastern and western specimens of *C. parallela* have a rounded proctiger and can be distinguished on that basis and on their colour: size and structure of male genitalia. Both sexes of the larger western species have an ornamented proctiger. *C. octopunctata* is distinguishable on the basis of the structure of male genitalia and the lack of apical spines on the elytra. Further work is required to delimit the remaining species.

#### Etyymology

The name is derived from *L. octo*, eight and *L. punctation* spotted.

#### *Themognatha viridescens* sp. nov. (FIGS 1A, 3)

*Holotype*: ♂, Iron Ra., Qld, 20.vi.1980, G. Wood, SAMA 1 21291.

*Allotype*: ♀, Iron Ra., Qld, 30.iv.1966, J. Kerr, ANIC.  
*Paratypes*: Qld: 2 ♀♀, Iron Ra., 3/9.v.1966, J. Kerr, ANIC; 1 ♂, Iron Ra., 24.v.1974, M. Walford-Huggins, MHSA; 1 ♀, Iron Ra., Qld, 19.v.1978, G. Wood, GWQA; 1 sex indetermin. 5.v.1966, J. Macqueen, J. Kerr, ANIC.

#### Colour

Head, antennae, pronotum and scutellum bright green with yellow reflections. Elytra yellow with following dark green markings: narrow basal margin; medial fascia not reaching margin, apical mark connected along suture to fascia. Ventral surface mainly bright green with yellow reflections, male with testaceous patches on  $S_6$  and  $S_7$ , abdomen all green in female; legs bright green with yellow reflections.

#### Shape and sculpture

Head punctation fine, even, dense, median impressed basal line; frons moderately hairy; labrum longitudinally divided and pointed. Pronotum narrower than elytra, L:W 0.6, punctation fine moderately dense; sides rounded from base to 1/3 distance to apex, then explanate and converging anteriorly, laterally flattened; anterior margin bisinuate, posterior margin almost straight; median glabrous line from base to near apex. Scutellum scutiform, anterior margin straight, concave without punctures, 1/8 width of elytra. Elytra slightly wider than thorax; elytral interneurs long and with scutellary striole, strongly marked with heavy punctation and additional punctation on shoulders; intervals flat, sides sub-parallel then tapering to pre-apical areas; apex bisinuate, both spines prominent, interval between sinuous, lateral spine anterior to medial spine. Ventral surface: prosternum hairy, finely punctured, with a definite forward medial projection; pro-episternum finely punctured with deep smooth fossa in posterior angle; mesosternum and metasternum smooth medially with coarser punctation laterally; hairy, hair long and fine medially, shorter



Fig. 3. Habitus illustration of *Themognatha viridescens* sp. nov. holotype.

and coarser laterally; abdomen smooth and shiny in male, punctation very fine, apically hairy in female.  $S_2$ : male deeply concave; female rounded. Feet: tarsal claws without a notch.

#### Size

Male, 31.4 x 11.4 mm (2). Females, 30.7 x 11.8 mm (4).

#### Aedeagus (Fig. 1A)

Parameres parallel-sided from basal piece, angled outwards premedially, rounded at apex. Penis pointed, sides acutely angled away. Apophysis of basal piece medium width, tapered, rounded at apex.

#### Remarks

This is an unusual species as it shows two characters found in the related genus *Calodema* C&G. It has a small medial projection on the anterior margin of the prosternum, but not as large as those found in *Calodema*. The scutellum is wider than in other *Themognatha* in relation to the elytral width, although not as wide as any of the known *Calodema* species. However, the body is not sinuous in lateral profile, the pronotum is not as wide as the elytra and the elytral interneurs are clearly defined as in *Themognatha*. The tarsal claws are not notched, but this is a variable character found in some *Themognatha* and not in others.

#### Etymology

Derived from *L. viridis*, green.

#### *Astraeus (Depollus) powelli* sp. nov. (FIGS 1G, 4B)

**Holotype:** ♂, Quairading, 7.xi.1970, S. Barker, SAMA I 21292.

**Allotype:** ♀, Quairading, 26.i.1991, M. Golding, M. Powell, WAMA.

**Paratypes:** W.A.: 1 ♂, Tammin, 8.xi.1970, S. Barker, SAMA; 1 ♂, 17 km E Dowerin, 21.x.1989, M. Golding, M. Powell, MPWA; 1 ♂, 6 km SE Tammin, 15.xii.1990, M. Golding, M. Powell, MPWA; 1 ♂, 43 km E Merredin, 26.x.1991, M. Golding, M. Powell, MPWA; 2 ♂♂, 32 km E Yellowdine, 21/22.x.1991, T. M. S. Hanlon; 2 ♀♀, Quairading, 27.xii.1991, K. K., MPWA; 4 ♀♀, Quairading, 1.1.1992, M. Golding, K. K., MPWA.

#### Colour

Head, antennae, pronotum black with blue and purple reflections. Elytra black with following yellow markings: irregular marks along width of one striae, mainly concentrated along 4th and 8th intervals from suture and along the margin on basal half. Ventral surface and legs purple; lateral yellow spots on  $S_3$ ,  $S_4$ ,  $S_5$  in most specimens last one absent in holotype. Hairs silver.

#### Shape and sculpture

Head punctures small medially, larger laterally, small glabrous median keel near apex merging into impressed

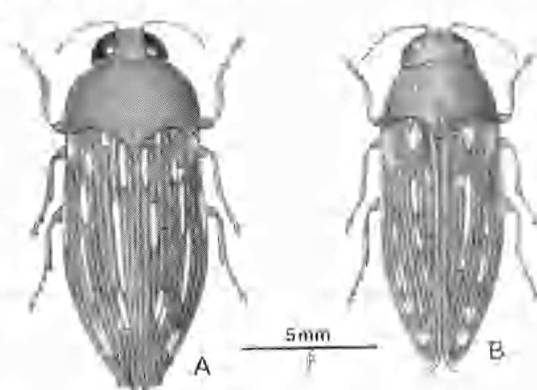


Fig. 4. Habitus illustrations of the following *Astraeus* species: A. *A. aberrans* v. de Poll. B. *A. powelli* sp. nov. holotype.

line basally. Pronotum punctures smaller medially, larger and in form of shallow fovea laterally, glabrous median area; anterior margin projecting medially, basal margin strongly bisinuate, laterally hairy. Elytra: intervals between striae convex and smooth, laterally parallel-sided from base, rounded post-medially and narrowed to apex, small pre-apical notch on margin, broad outwardly curving sutural spine, hairy overall. Ventral surface and legs punctured and hairy.

#### Size

Males, 12.6 ± 0.22 x 4.4 ± 0.11 mm (7). Females, 15.3 ± 0.38 x 5.6 ± 0.12 mm (7).

#### Aedeagus (Fig. 1G)

Parameres parallel-sided from basal piece, gradually widening until rounded to pointed apex. Apophysis of basal piece medium width, rounded apically.

#### Remarks

This species has been confused with *A. aberrans* v. de Poll (Fig. 4A). It differs from that species by being narrower, having most of the yellow elytral marks medial and post-medial whereas in *A. aberrans* they are more evenly distributed, by having single outcurving sutural spines on the elytra while in *A. aberrans* the sutural spines are small and there is a definite small marginal spine.

#### Etymology

In honour of Mr M. Powell of Melville, W.A. who has assisted my research for many years.

With the addition of the above new species the key to *Astraeus (Depollus)* (Barker 1975, p.107) requires the following replacement:

Replace 4. *aberrans* van de Poll with:

4a. small, almost straight marginal spine

..... *aberrans* van de Poll

4b. broad, outcurving marginal spine

..... *powelli* Barker.

With the addition of this species the sub-genus *Depollus* now contains nine species.

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